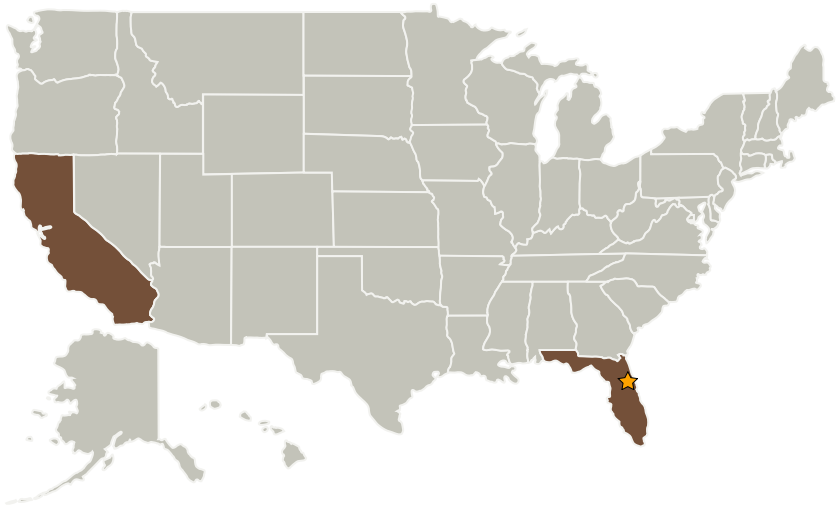
Multipurpose Electric Potential Sensor for Spacecraft Applications, Phase II

Completed Technology Project (2004 - 2006)

Project Introduction

The original goal of Phase I was to study the feasibility of developing an electric sensor that can be used for as many NASA sensing applications as possible. During Phase I, in discussion with the COTR, the development of a ground-based miniature sensor for detecting and measuring the electrostatic potential and charge distribution generated on payloads, spacecrafts and landers was identified as a need of immediate importance to NASA operations at the KSC spacecraft assembly facility and throughout NASA. The innovation proposed in Phase II is the world's first wearable static electric voltage detection system. This system will be able to detect a static potential at sufficient range to prevent the system's wearer triggering a discharge. Versions of the system will be demonstrated for mounting on a hardhat or helmet of a protective suit, and on the forearm over a sleeve. In addition, the same core technology will be tested in the stationary mode, attached to a doorway to screen personnel entering a restricted area, and on a surface of sensitivity equipment to detect the increase of ambient electric field that might trigger an electrostatic discharge.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Quantum Applied Science and Research Inc	Supporting Organization	Industry	San Diego, California

Primary U.S. Work Locations	
California	Florida

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.2 Weather/Environment